ABSTRACT

A process for removing contaminants from the products of a Fischer-Tropsch synthesis reaction, said contaminants comprising (i) particulates having an effective diameter of greater than 1 micron and (ii) at least 5 ppm of aluminum in aluminum-containing contaminants having an effective diameter of less than 1 micron, said process comprising the steps of (a) passing the products of the Fischer-Tropsch synthesis reaction through a first particulate removal zone capable of removing particulates having an effective diameter of greater than 1 micron; (b) collecting from the first particulate removal zone a substantially particulate free Fischer-Tropsch feed stream containing 5 ppm or more of aluminum in aluminum containing-contaminants having an effective diameter of less than about 1 micron; (c) contacting the substantially particulate free Fischer-Tropsch feed stream in up-flow mode with an aluminum active catalyst in a guard-bed under aluminum activating conditions, whereby a feed stream mixture is formed which comprises aluminum-containing particles having an effective diameter of more than 1 micron in a Fischer-Tropsch hydrocarbon continuous phase; (d) passing the feed stream mixture through a second particulate removal zone capable of removing substantially all of the aluminum-containing particles formed in step (c); and (e) recovering from the second particulate removal zone a Fischer-Tropsch product containing less than about 5 ppm total aluminum.